

What is claimed is:

- 1 1. A sprocket for a silent chain comprising a plurality of teeth around a periphery of the
2 sprocket, each of the plurality of teeth comprising:
3 a pair of side portions having a first hardness located on opposite sides of a
4 central portion having a second hardness, wherein the first hardness
5 is greater than the second hardness.
- 1 2. The sprocket of claim 1, wherein each of the side portions has a width approximately
2 equal to a thickness of an outermost link plate of the silent chain.
- 1 3. The sprocket of claim 1, wherein the sprocket and the plurality of teeth are formed by
2 rolling.
- 1 4. The sprocket of claim 1, wherein the sprocket and the plurality of teeth are formed of a
2 sintered alloy and the pair of side portions of the plurality of teeth have a density
3 greater than the central portion of the plurality of teeth.
- 1 5. The sprocket of claim 1, wherein the side portions and the central portion of the
2 plurality of teeth are formed of discrete members integrated together.
- 1 6. The sprocket of claim 5, wherein the discrete members are integrated by fasteners.
- 1 7. A method of manufacturing a sprocket for a silent chain comprising the steps of:
2 preparing a sprocket material having a plurality of teeth formed around a
3 periphery of the sprocket;
4 forming a pair of side portions disposed on opposite sides of each of the
5 plurality of teeth of the sprocket material, the pair of side portions
6 protruding relative to a central portion of the plurality of teeth; and
7 forming a tooth surface on each of the plurality of teeth of the sprocket
8 material by rolling.
- 1 8. A method of manufacturing a sprocket for a silent chain comprising the steps of:

2 providing a tooth central portion of a first hardness and a pair of tooth side
3 portions of a second hardness, the second hardness being greater
4 than the first hardness; and

5 forming the sprocket by integrating the tooth central portion with the tooth
6 side portion.

1 9. A method of manufacturing a sprocket for a silent chain comprising the steps of:

2 providing a sinterable material of a higher density for a pair of side portions
3 disposed on opposite sides of a plurality of teeth around the
4 periphery of the sprocket and a sinterable material of a lower
5 density for a central portion of the plurality of teeth around the
6 periphery of the sprocket; and

7 forming the sprocket by sintering the sinterable material of a higher density
8 and the sinterable material of a lower density together to form the
9 plurality of teeth.